

WHAT IS CLAIMED IS:

1. A thin-film semiconductor device comprising:

a first plurality of thin-film transistors having different driving voltages than a second plurality of thin-film transistors, wherein said first and second plurality of transistors are formed on a glass substrate,

wherein an electric field of a gate electrode at each of said driving voltages of said first and second plurality of thin-film transistors is in a range of about 1MV/cm to 2MV/cm, and a drain concentration of P-type thin-film transistors is in a range of about  $3E+19/cm^3$  to  $1E+20/cm^3$ .

2. The thin-film semiconductor device according to claim 1,

wherein said first plurality of thin-film transistors comprising N-type and P-type thin-film transistors have a lower driving voltage than said second plurality of thin-film transistors comprising N-type and P-type thin film transistor.

3. The thin-film semiconductor device according to claim 1,

wherein a plurality of gate insulating films of said first and second plurality of thin-film transistors have substantially the same thickness.

4. The thin-film semiconductor device according to claim 2,

wherein at least one N-type thin-film transistor of said second plurality of thin-film transistors have a lightly-doped drain structure.

5. A thin-film semiconductor device comprising:

a first plurality of thin-film transistors having different driving voltages than a second plurality of thin-film transistors, wherein said first and second plurality of transistors are formed on a glass substrate,

wherein an electric field of a gate electrode at each of said driving voltages of said first and second plurality of thin-film transistors is in a range of about 0.2MV/cm to 0.8MV/cm, and a drain concentration of P-type thin-film transistors is in a range of about  $3E+19/cm^3$  to  $1E+20/cm^3$ .

6. The thin-film semiconductor device according to claim 5,  
wherein said first and second plurality of thin-film transistors comprising N-type and P-type thin-film transistors have a lower driving voltage than said second plurality of thin-film transistors comprising N-type and P-type thin film transistor.

7. The thin-film semiconductor device according to claim 5,  
wherein a plurality of gate insulating films of said first and second plurality of thin-film transistors has substantially the same thickness.

8. The thin-film semiconductor device according to claim 6,  
wherein at least one N-type thin-film transistor of said second plurality of thin-film transistors have a lightly-doped drain structure.

9. A thin-film semiconductor device comprising:  
a first plurality of thin-film transistors having a driving voltage which is lower than a driving range of a second plurality of thin-film transistors, wherein said first and second plurality of thin-film transistors are formed on a glass substrate,  
wherein a drain concentration of said first and second plurality of thin-film transistors is in a range of about  $3E+19/cm^3$  to  $1E+20/cm^3$ .

10. The thin-film semiconductor device according to claim 9,  
wherein a plurality of gate insulating films of said first and second plurality of thin-film transistors have substantially the same thickness.

11. The thin-film semiconductor device according to claim 9,  
wherein said first and second plurality of thin-film transistors comprise N-type and P-type thin-film transistors.

12. The thin-film semiconductor device according to claim 9,  
wherein gate insulating films of said first and second plurality of thin-film transistors are formed of substantially the same materials.

13. A liquid crystal display comprising:  
a thin-film semiconductor device according to claim 1; and  
a driver circuit.

14. A liquid crystal display comprising:  
a thin-film semiconductor device according to claim 9; and  
a driver circuit.

15. A thin-film semiconductor device manufacturing method comprising:  
providing a glass substrate  
forming a plurality of gate insulating films of a plurality of thin-film transistors,  
wherein said gate insulating films are formed so as to have a substantially the same thickness,  
and  
wherein said plurality of thin-film transistors have different driving voltages.

16. The thin-film semiconductor device manufacturing method according to claim 15,  
wherein said gate insulating films are formed at substantially the same time.

17. The thin-film semiconductor device manufacturing method according to claim 15, further comprising:

forming source/drain regions of a plurality of P-type thin-film transistors having different driving voltages.

18. The thin-film semiconductor device manufacturing method according to claim 15, further comprising:

forming source/drain regions of a plurality of N-type thin-film transistors having different driving voltages.

19. The thin-film semiconductor device manufacturing method according to claim 17,

wherein said source/drain regions are formed at substantially the same time.

20. The thin-film semiconductor device manufacturing method according to claim 18,

wherein said source/drain regions are formed at substantially the same time.

21. The thin-film semiconductor device manufacturing method according to claim 18, further comprising:

forming Lightly-doped drain structure on at least one part of the N-type thin-film transistors.